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Vol. IX JUNE, 1922 No. 6

BOSTON SOCIETY OF CIVIL ENGINEERS

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PROCEEDINGS

PAPERS IN THIS NUMBER

"What shall be Done to Secure Better City Planning?" By Geo. H. Nye.

Memoirs of Deceased Members.

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MINUTES OF MEETINGS.

BOSTON, May 17, 1922. — A regular meeting of the Boston Society of Civil Engineers was held this evening in Chipman Hall, Tremont Temple, and was called to order at 7.45 P.M., by the Senior Vice-President, Mr. E. H. Rogers.

There were 130 members and guests present.

The minutes of the last meeting were read and approved.

The Secretary reported for the Board of Government the names of those elected to membership in the grade of Member:

Members — Messrs. Gordon M. Fair* and Edward L. Lockman.

The Chairman announced that a convention was to be held by the American Society of Civil Engineers at Portsmouth,

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* Indicates transfer from grade of Junior to Member.

N. H., on Wednesday and Thursday, June 21 and 22. In accordance with the By-Laws a regular meeting of the Boston Society would be held on Wednesday, June 21, unless otherwise provided. On motion of Mr. Whitney it was voted that the regular June meeting of the Society be omitted.

The Chairman announced that the Board of Government had authorized the Committee on Social Activities to determine whether or not an outing should be held in June, and to select a date.

The report of the Committee consisting of Messrs. F. S. Hart and F. I. Winslow, appointed to prepare a memoir of Charles E. Haberstroh, was presented. This report was accepted with the thanks of the Society and was ordered printed in the JOURNAL.

The subject of the meeting was "City Planning."

Mr. George H. Nye, City Engineer of New Bedford, presented a paper on the general subject of city planning, dealing with the present situation in regard to street development and including a discussion of ways and means to secure the scientific development of a satisfactory system of streets.

Mr. Arthur A. Shurtleff, Town Planner, gave an illustrated talk showing slides of various developments. Particular attention was given to the proposed plans for the City of Newton.

Miss Elizabeth M. Herlihy, Secretary of the Boston City Planning Board, described the comprehensive studies which are being made for the proper development of Boston.

Mr. John F. Fitzgerald, a former Mayor of Boston, spoke on city planning for Metropolitan Boston with particular reference to improved transportation facilities.

Mr. Desmond FitzGerald urged the study of civic centres in connection with city and town planning.

Mr. E. H. Rogers, City Engineer of Newton, described the zoning regulations which are under consideration in that city.

Mr. F. O. Whitney, Chief Engineer of the Street Laying Out Department, City of Boston, told of the work of the Board of Survey.

Mr. Morris Knowles, of Pittsburgh, described the work done in connection with zoning by Secretary Hoover.

Mr. R. A. Hale described briefly the important work of Mr. Charles H. Storrow in the early development of streets in Lawrence, Mass.

Upon motion of Mr. F. O. Whitney, a vote of thanks was extended to those, not members of the Society, who had participated in the meeting.

Adjourned 10.10 P.M.

J. B. Babcock, *Secretary.*

Boston, May 19, 1922. — The first Annual Meeting of the Northeastern University Section of the Boston Society of Civil Engineers was held this evening in Room 303, Gainsboro Building, Boston.

The meeting was called to order by Vice-Chairman E. S. Parsons, at 7.30 o'clock. There were 15 members present.

Minutes of the previous meeting were read and accepted.

The adoption of the Constitution and By-Laws of the Section was then taken up. Motion made and seconded that Article II, Section 2, be changed to read as follows: " Members and Junior members only shall be entitled to the right to vote." Motion was passed. Motion was made and seconded that an additional section be made to Article II, Section 3 to read as follows: " Members and Junior members only of this Section who are students at Northeastern University are eligible to hold office." Motion was passed. No other changes were made, then the Constitution and By-Laws of the Section were accepted by a unanimous vote.

The following members were elected as officers:

Chairman — D. C. Milne.
Vice-Chairman — Henry Brask.
Clerk — A. O. Bradshaw.
Executive Committee —
    K. H. Aimo.
    A. S. Dawe,
    Benjamin Rubin.

Meeting adjourned at 9.00 o'clock.

Respectfully submitted,

K. H. Aimo, *Clerk.*

Membership Cards.

Any member desiring a membership card may secure it by applying to the Secretary.

LIST OF MEMBERS.

ADDITIONS.

Chiesa, Ovidio D. .... 43 Rodman St., Quincy, Mass.
Randlett, Frederick J. .... 110 Blue Hill Ave., Roxbury, Mass.

CHANGES OF ADDRESS.

Cameron, Edward H. .... 44 Spring St., Somerville, Mass.
Carter, Clarence E. .... P.O. Box 174, Plattsburg, N. Y.
Connor, Bernard D. .... 15 Pennsylvania Ave., Somerville, Mass.
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Whitmore, Harold C. ... Care Stone & Webster, Flat Rock, Wayne County, Mich.
Williams, A. K. .... 143 Newbury St., Roslindale, Mass.

LIBRARY NOTES.

RECENT ADDITIONS TO THE LIBRARY.

U. S. Government Reports.

Water Supply Paper. No. 487.

Municipal Reports.

Boston, Mass. Annual Report Finance Commission. 1921.

Cambridge, Mass. Annual Report Water Department. 1920.

Concord, N. H. Annual Report Board of Water Commissioners. 1921.

New Bedford, Mass. Annual Report Water Board. 1921.

North Adams, Mass. Annual Report City. 1921.

Philadelphia Pa. Annual Report Water Supply Problem.

1922.

Springfield, Mass. Annual Report Municipal Water Works. 1921.

State Reports.

Massachusetts. Industrial Review, No. 7, 1922.

Miscellaneous.

Collapsing Pressures of Lap-Welded Steel Tubes. R. D. Stewart.

Handbook for Highway Engineers. Harger & Bonney. 1919.

LIBRARY COMMITTEE.

Vol. IX JUNE, 1922 No. 6

BOSTON SOCIETY OF CIVIL ENGINEERS
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PAPERS AND DISCUSSIONS

This Society is not responsible for any statement made or opinion expressed in its publications

WHAT SHALL BE DONE TO SECURE BETTER CITY PLANNING?

BY GEO. H. NYE,* MEMBER BOSTON SOCIETY OF CIVIL ENGINEERS.

(Presented May 17, 1922.)

WHAT is City Planning? The best definition I know is that of Mr. Nelson P. Lewis, who says, " City planning is simply the exercise of such foresight as will promote the orderly and sightly development of a city and its environs along rational lines, with due regard for health, amenity, and convenience for its commercial and industrial advancement."

Included in this definition are implied considerations for providing proper conditions for manufacturing, commerce and transportation; an adequate street system with sewers, water, light and power; suitable housing for the inhabitants; schools and other public buildings; parks, playgrounds and all recreational facilities.

These considerations call for consistent planning and lead to the so-called zoning ordinances to provide suitable living conditions for the shop and home. This subject is so large that it would require volumes to fully discuss the various features.

I do not propose to-night to speak of the " City Beautiful," of civic centers, parks and boulevards, or of the relative values of diagonal or gridiron layout of streets, or of the intricacies of the zoning ordinances.

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* City Engineer. New Bedford, Mass.

In meetings which I have attended there has oftentimes been an attempt to cover too much ground, and too much time has also been devoted to advocating the desirability of systematic planning.

We may well save time by conceding the need of all these things and devote our time to a discussion of what seems to me to be our most urgent problem to-day, — the securing of a satisfactory street system. This is a fundamental requirement about which all other features may be built up. In our New England cities and towns street systems already exist and must be given due consideration, although it is seldom found possible to alter them radically.

It is the duty, however, of those holding official positions to see that, in the future growth of our cities, the mistakes of the past are not allowed to be repeated.

It will perhaps help us to visualize our present problem if we pause for a brief review of the history of the growth of the country which has resulted in conditions as we now find them.

The first settlers naturally located on the coast. There was before them a vast, unknown wilderness, populated by a hostile people. Behind them was the ocean, furnishing their only means of connection with the world that could supply them with the commodities which they could not themselves produce.

The settlements first spread along the shore and their principal means of communication was by water. Later these settlements spread back into the fertile river valleys and were reached by means of the old Indian trails which had been followed by the natives for unknown ages.

These trails were crooked and indirect, following the lines of least resistance, keeping on the ridges to avoid swamps, and turning sharply to cross lowland and streams by the shortest possible routes. The mode of travel was by foot or horseback, and roads as we know them did not exist at this time.

The people generally relied wholly on their own efforts for their existence, raising their own grain, meat, flax, and wool; hewing their own timber, and weaving their own cloth. When, later, this was proved to be a hardship and a wasteful method of production, we find little settlements growing about the good harbors and at water-powers where small manufacturing, grist mills, saw mills, etc., were established and where those properly equipped for the purpose and devoting their whole time to these industries did the sawing, weaving, and similar tasks.

The workers in these small manufacturing plants located their homes in the immediate vicinity, and in those days short, narrow streets were opened for their use. A particularly good example of this type of development can be found in the old village of Marblehead.

Although the villages commenced to develop street systems, these were adapted only to the needs of that time when the distances traveled were short. The one fixed journey was usually the weekly trip to the church; then there were visits to the grist mill, the blacksmith shop, or the country store.

The trails from village to village were gradually improved and made passable for teams, but no very great development of these was made until 1800, when post roads were first established, usually by private enterprise. These privately owned roads were known as turnpikes. They were provided with toll gates and depended for their support upon the fees paid by the users of the roads. Some of these turnpikes still followed the old trails while others were laid out in absolutely straight lines, extending for long distances. Over such roads as these it was possible to ride by stage coach from Boston to Bristol Ferry in the remarkably short time of 31 hours, leaving Boston Tuesdays at 5 A.M., and arriving at Bristol at 12 M. on Wednesdays, where connection could be made for Newport. The fare for this trip was 25 shillings for each passenger, with an allowance of 14 pounds of baggage. The distance traveled was 55 miles.

While of course new roads have been built continually since that time, it is still true that the main roads through New England follow these old Indian trails, and it is this condition which confronts our State Highway Department to-day.

Long distance automobile and trucking traffic is now being moved over a system of roads developed originally for local use and wholly unsuited to modern needs. The officials of these departments will probably concede the great relief a few through roads, developed along the same lines as those on which our railroads have been built, would be to the present congestion of our roads.

But our problem has to do with the cities, and I have mentioned the larger situation only because of its similarity.

In the older sections of our cities also we may still trace the location of some of these old trails and early local roads. These old road systems and streets, crooked, narrow, indirect, and entirely unsuited to their present day use, have been widened and added to by later generations and now form the business centers of some of our largest cities.

There are millions of dollars worth of property now located on these streets and the cost to-day of a general tearing down and relocating is prohibitive. Even in the case of conflagrations which have devastated large sections in some of our cities, comparatively few changes in the street system have resulted. A few streets have been widened, and here and there a new street put through or an old one extended.

It is visionary to expect to take our existing cities and rebuild them to meet modern conditions. The best we can do is to make such widenings and extensions as are absolutely necessary, and this does not properly fall under the section of city planning which I wish to consider. In these cases the need is urgent and the remedy usually apparent, and the question resolves itself into one of engineering and business, one of balancing known benefits to be derived with the cost of securing them. The relief afforded by this expedient is well illustrated by Figs. 1–4.

The larger and more difficult problem is to design and put into execution a plan for a proper growth of the cities as they now exist so that the newer sections will be free from the undesirable features of the old.

This question further resolves itself into two, one of design and one of accomplishment.

The first is largely the problem of the engineer, and is, I think, fairly easy of solution. In studying the needs of a city we should consider that in reality it is but a large and complete industrial plant, having facilities for carrying on the manufacturing and commerce of the people and furnishing them with homes and all suitable conveniences. Viewed in this light, the proper layout of the plant does not seem to present a difficult or unusual problem, and is fairly an engineering one.

My method of procedure, assuming the usual case of a city or town already established with a considerable portion of the surrounding territory cut up with new streets and with scattered houses, would be substantially as follows:

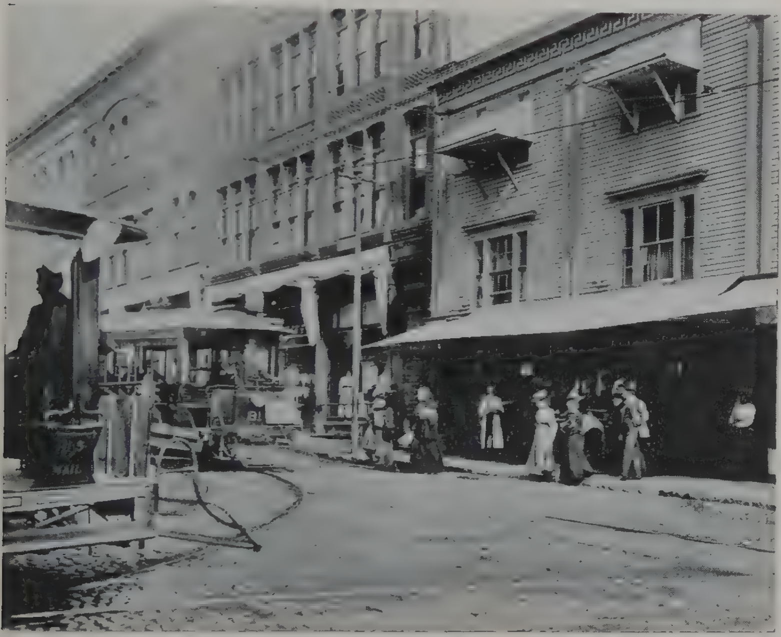

FIG. 1.—N. W. CORNER UNION AND PURCHASE STREETS BEFORE WIDENING.

First secure an accurate topographical map of the district, totally ignoring the existing city, and on this lay out one or more ideal plans for the development of a city, taking advantage of all the natural features in locating the transportation system, manufacturing section, and business and residential districts.

Next secure a plan of the existing city with its actual transportation lines and various districts. Then, by superimposing one upon the other, we can readily see where glaring mistakes exist, if there are any such, and in making any changes due to congestion of present street conditions we can more readily determine where and in what manner to make them in order to approach most closely the ideal condition. This method will prevent haphazard improvements which will be only local in their effect.

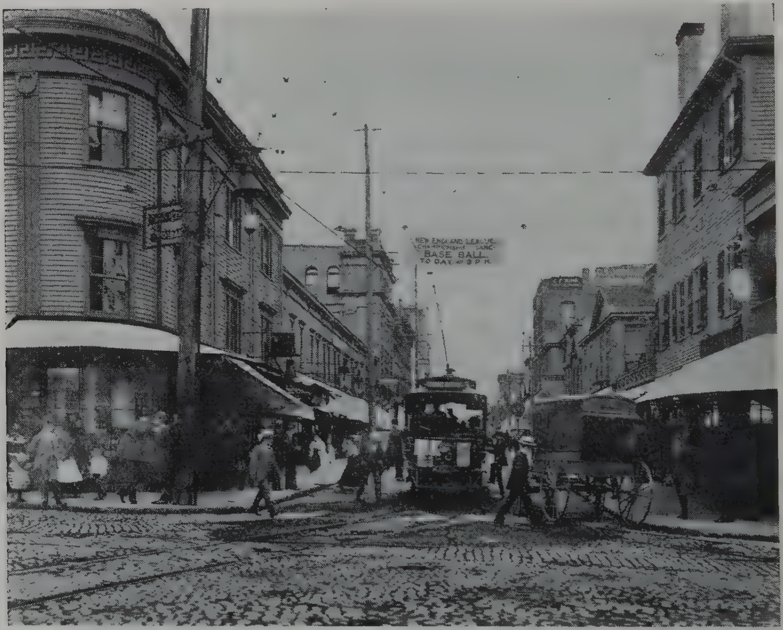

Fig. 2. — Purchase Street and Union Street (Looking North) Before Widening.

Probably the cost of changes of this kind would be so great that but few would be warranted except in the most congested sections. But as we approach the outskirts we can begin to approximate more clearly the ideal layout obtained by assuming the site of the city to be unoccupied. And as we get farther out we have a still freer hand and can, if necessary, re-locate railroads, waterfronts and main roads.

In other words, by a careful study of the needs of the city and the topography of the site we will be able by foresight to develop a street system which will give an opportunity for much better living conditions in the newer sections of the city than can ever be expected in the old.

But it is much easier to conceive than to execute. We are not dealing with a free hand to locate streets wherever they may be most needed. The land to be occupied by such streets is owned by private individuals, and I have found that each individual owner has ideas as to the manner in which his particular holding shall be developed, and as hardly any two owners desire the same thing, the matter usually results in a conflict of opinion between the authorities and the owners of various properties.

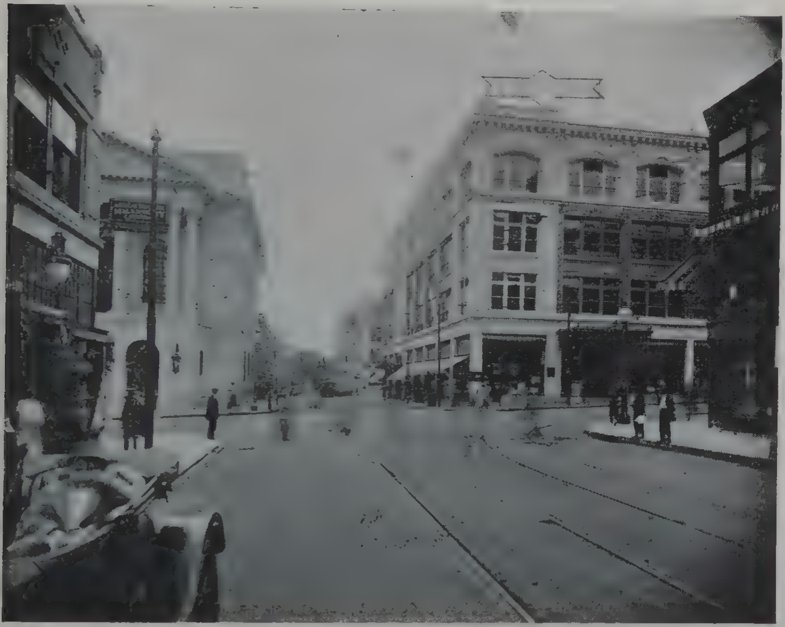

FIG. 3.—PURCHASE ST. AT UNION (LOOKING SOUTH) AFTER WIDENING (1915).

In the earlier development the villages were usually provided with streets which were fairly uniform, although narrow. Later, as the villages grew, the farms immediately surrounding them were sold for building purposes. In my own city, and I think in others, the boundary lines of these various farms can be traced to-day by a series of breaks in the continuity of the streets, each farm having been subdivided irrespective of the streets located on the adjacent land.

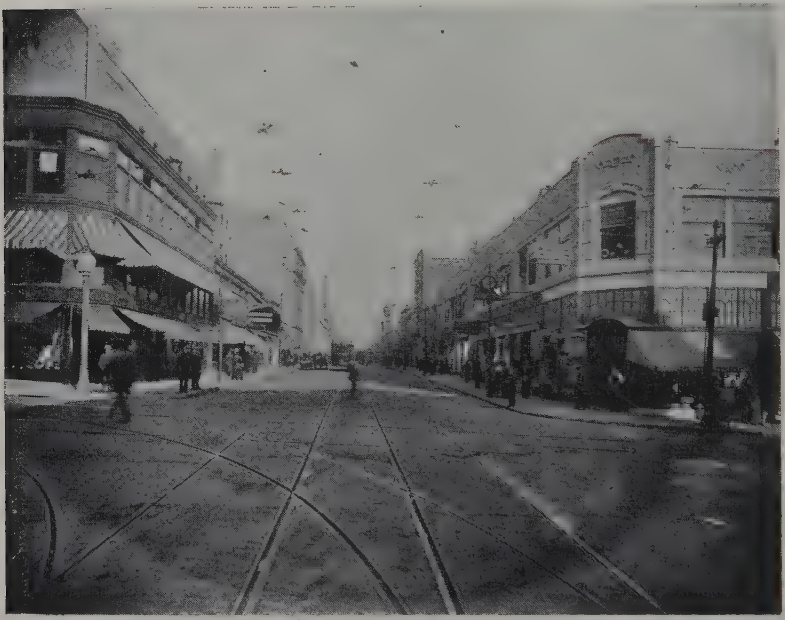

FIG. 4.—PURCHASE ST. AT UNION (LOOKING NORTH) AFTER WIDENING (1915).

At this period these lands were usually sold in lots by the original owners, but during the latter part of the last century, when the cities had become much larger and were growing rapidly, largely with a foreign population, land companies were formed with offices in many cities. Their object was to purchase cheap farm land and cut-off land in the outskirts of the city and sell the same in small lots. The price paid for the whole was so low that these lots could be sold at an apparently reasonable figure and yet secure enormous profits to the owners.

These companies, comprised generally of men not living in the cities where their operations were carried on, were but little concerned in the interests of those cities and cut their holdings in a manner to yield the greatest profits to themselves. Each owner cut his own tract to suit his convenience, without regard to the continuity of streets or possibility of proper drainage, and the cities now have a condition to face which will cost them enormous sums of money to remedy.

The second part of our problem — that of accomplishment — is most clearly for our lawyers and law makers, who must furnish us the means to prevent improper development and for acquiring and preserving proper street locations in advance of the actual need of streets for travel; in other words, the means for securing an adequate method of permanency for a street plan for future needs.

Under the present laws I know of no way that this can be done except by the actual taking of the land required for street purposes under the right of eminent domain. If this is done, the taking becomes void in two years after its adoption unless entry, for the purpose of construction of the street, is actually made on each piece of land so taken. In case such action is allowed to lapse, every owner of land so taken, who has been actually injured through loss or use or opportunity for sale, is entitled to receive compensation from the city for such actual damage as he has suffered.

If entry is made within the prescribed time, however, no individual can get title to land so taken through a claim of adverse possession until the expiration of forty years. On the other hand, the city has become liable for the safe condition of the street so acquired for travel. This necessitates at least the clearing and grading of the street.

Such conditions, of course, preclude the possibility of cities securing many miles of streets on their outskirts which we all know will be required for their future growth. The streets are not required now, it would be most undesirable to destroy all the farms in the suburbs, and the cost would absolutely prevent such action if it were desired.

How then can we plan for the future if we cannot enforce the plan?

To revert to the early settlement of the country, one of the first acts of the colonists was to hold meetings and adopt a bill of rights, which is practically our constitution of to-day.

While the whole object of emigrating to this country was to secure freedom and liberty, the colonists recognized that there was no such thing as absolute liberty for the individual, but that all should consent to be governed by laws made by themselves for the best interests of the community as a whole. This idea is perhaps what is now termed the police power upon which the zoning ordinances are founded.

In this bill of rights was directly stated the right of the individual to acquire, possess and enjoy property, but the interests of the community were held superior to those of the individual. The public could dispossess the individual of his property for the public good upon proper compensation and by due process of law and for specific purposes. This may be called to-day the constitutional right.

All this, of course, was written at the time I have already recalled, when roads and present day conditions were nonexistent and unthought of, but is the most sacredly regarded of all our laws, and has come down to us at the present day practically unchanged. It is this constitution against which we stumble in all our attempts to provide a street plan for the future, and it may have to be amended to conform to modern conditions before we can obtain any effective method of carrying out a city plan.

In my opinion it is fundamentally true that the location of a street for the use of the public for all time is a public function and should not be determined by the selfish interests of an individual. Equally, the prospective location of a future street across certain lots, preventing the sale of the lots or their use for building, is a loss to the individual owner, suffered for the benefit of the public. If the right to so locate future streets is to be exercised, some fair method should be devised to compensate the individual for the actual loss thus suffered.

One method of accomplishing this object might be by so amending the laws relative to the laying out of streets as to allow the municipalities to accept streets, paying damages therefor where they occur through destroying the salability or use of lots too small to be properly adjusted to the street location; and by removing the restriction of the loss of the layout unless entry is made for construction within a given period; and the requirement that the municipality be liable for the safe condition of such street for travel.

This would require the creation of a dual form of acceptance: The first action to secure only the location of the street, allowing present owners to use the land so taken for all purposes except such as would render the municipality liable for additional damages when it is actually taken for travel: and a section action taking such location for the actual opening of the street for the use of the public.

The state has recognized the need of some such provision and has provided machinery for this purpose in two forms, neither of which, in my opinion, accomplishes the purpose intended.

In the General Laws, chap. 41, sect. 70–73, every city and town of over 10 000 inhabitants is required to create a planning board. But that this is a half-hearted measure is evidenced by the fact that no penalty is prescribed for non-compliance with this mandatory law. That the law is not favorably considered is further evidenced by the fact that many cities and towns have refused to comply with it, and among them some that are keenly alive to the desirability of proper planning. The law is extremely weak in that it gives the planning boards no powers beyond advising the councils or selectmen of the municipalities. If such a planning board devised a complete plan and their plan was duly adopted by the municipal authorities, no municipality in the state could carry out the plan successfully for the reasons above stated.

The other medium for securing a proper plan is the Board of Survey,—General Laws, chap. 41, sect. 73–81. A perusal of this law at first gives the impression that here is the very thing sought, but at the end it gives the penalty for noncompliance which is a negative one and so weak that it renders the law valueless.

In accordance with this law, if an individual subdivides his land by streets and does not secure the approval of the local board of survey, no register of deeds may record his plan, and no public improvement may ever be made on such street. This merely keeps the plan out of the registries, while the land can be readily conveyed by metes and bounds in a perfectly legal manner, the only result being that the public is deprived of the convenience of consulting the plan.

If a colony of houses were built on a group of streets not approved, I cannot conceive any municipality allowing a health nuisance to be developed in its midst through lack of proper water supply and sewerage, or that they would allow the requests of any considerable group of taxpayers and voters to go unheeded. The result would be that in the end the board must give its approval to the plan they at first rejected and furnish the public improvements.

The second section of this law provides a means whereby a municipality can study its needs and conditions and adopt a complete, desirable, and scientific plan for a system of streets, exactly in accordance with our highest aims. Even when this is done, however, an individual owning a small lot and not desiring a street across the same in accordance with the plan, can build directly within the limits of a proposed street; and the only penalty therefor is the inability of the authorities to put sewer, water or any public improvement in a street that he does not want to exist and which he himself has blocked by his building.

Such, then, is our situation to-day in this state. We all realize keenly the need for proper planning and its economic value. The engineers are capable of producing a reasonably good plan for the development outside the present built-up sections of the cities, securing for them the most desirable and economical location of streets and drainage.

On the other hand, I believe we are powerless to-day to put such a plan into effect under our present laws.

DISCUSSION.

Miss **Elizabeth M. Herlihy**.* This gathering here to-night brings joy to my heart. Too long has City Planning been hailed as a synonym for the City Beautiful. Too long have City Planners been assailed as sacrificing the economic for the æsthetic, the practical for the beautiful, utility for Utopia. The City Planning movement has been like a great ball of sunshine, poised more or less precariously on the edge of our municipal horizon, shrouded in a cloud of misunderstanding and distrust, appreciated by those close enough to see beyond the encircling shadows, but oftentimes misjudged by those outside the pale. Once those clouds of misunderstanding and distrust are pierced and dispelled by the cold, practical, analytical minds of our engineering populace, the effulgent rays of city planning principles, so long encased, will radiate and spread, bringing health and happiness into our homes; comfort, convenience and order into our daily lives; and progress and prosperity to our community.

To be entirely practical, — and I know that I must be if I am to find favor with my present audience,—I might say that all that has been said here to-night about unscientific development applies perhaps more specifically to Boston than it does to any other city in the United States. I feel that I am merely stating a fact, not voicing a criticism, when I say that the Boston of to-day, aside from its park system, is largely the result of haphazard development and unrelated growth.

I hesitate to say anything which appears like a criticism of our city, for I have more than ordinary love for it, and a more than ordinary appreciation of and admiration for its administrators, especially those with whom I have come in contact during my twelve years of municipal life. In fact, when I visit other cities, I come back firmly convinced that Boston has more natural advantages, is more logically developed, and is better governed than any other city in the world.

But the fact remains that Boston has not yet had a really thorough, painstaking, and farsighted study of its street problems in the big way in which other cities have approached the vital part of traffic reform. It is generally conceded that conditions attendant upon vehicular and pedestrian traffic are almost intolerable and yet the fact remains that, aside from certain street widenings and one-way street regulations which have acted merely as palliatives and in no sense as correctives, the first fundamental step in the adoption of a comprehensive street plan, designed to encourage and stimulate the growth and development of the city, is to be found in the recently authorized widening and extension of Stuart Street.

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* Secretary Boston City Planning Board, Boston, Mass.

Boston was one of the first cities in America to adopt a comprehensive height of building law; it has certain regulations governing the area or proportion of lot to be occupied for building purposes; it has a building zone within which structures must be of practically fire-resisting material; it has silence zones about its hospitals and zones of quiet in certain sections during certain hours of the night; but it has absolutely no regulation governing the use or development of property outside of the police power, which is usually an unpleasant influence to invoke.

The division of the city into residential, commercial and industrial districts would, as we have been told here to-night, result in stabilizing property values, protecting residential areas and promoting industrial and commercial development.

At the same time it would afford a solution of the public garage question, which is one of the most imperative problems confronting the municipality to-day. His Honor the Mayor has to-day signed the order of the City Council accepting the provisions of the Legislative Act which prohibits the erection or maintenance of a garage for more than four cars on the same street as, and within 500 feet of, any building occupied in whole or in part as a public or private school having more than fifty pupils, or as a public or private hospital having more than twenty-five beds, or as a church. Outside of this provision, however, the whole burden of demand, and refusal, or acceptance of hundreds of petitions rests upon the shoulders of the Mayor and Board of Street Commissioners.

The arrangement of streets, and the adoption of zoning regulations are the two topics which have been most frequently touched upon here to-night. In all probability these two subjects will afford a very fruitful field for the student of city planning in Boston for some time to come. Our park and playground system has been really developed, to a certain extent, with due regard to the requirements of the future; but we still have, among others, the problem of the development of our public buildings and their more extended use, and the development of our harbor, port and railroad facilities.

The total expenditures for Boston Harbor, made by the Federal Government, have been more than $12 000 000; while the Commonwealth of Massachusetts, in the 60-year period ending in 1919, expended more than $18 000 000 in its development and improvements; yet the statement has been recently made that, while port facilities at New York, Philadelphia and Baltimore were crowded, Boston was using only about 30 or 40 per cent. of what was available on its magnificent waterfront and harbor.

The City Planning Board has been studying these various problems during the eight years of its existence; and it has in that time made numerous recommendations, sporadic in a sense, but never one that has not been based upon a thorough, exhaustive and comprehensive survey of every possible factor entering in any way into the problem in hand. If we have had a single virtue in all these eight years, it has been in that one slogan, — comprehensive.

The dawn of the second century of Boston's municipal life, which we celebrated on the first day of May, 1922, means more than the turning of a single page in its history. It marks also the beginning of a new epoch in industrial life, the gradual readjustment of conditions from a war to a peace basis, and the settling down once more to the full enjoyment of our Constitutional birthright, — life, liberty, and the pursuit of happiness.

The City Planning Board felt that the time had also come to take a definite step looking toward future development in our municipal life, and accordingly recommended to His Honor the Mayor the preparation of a Comprehensive City Plan which should include all these problems which have been under discussion this evening, — streets, zoning, parks and playgrounds, public buildings, harbor, port and railroad facilities, not with the idea that the adoption of such a plan would prove a panacea for all existent troubles, but with the conviction that it would lend emphasis and direction to future efforts.

The recommendation met with the approval of His Honor, plus his financial coöperation, and we now have at our disposal a sum sufficient to defray the expense of the first step in the preparation of a Comprehensive City Plan for the City of Boston. This first step will consist in the securing of expert consultants who will bring to the work a wider knowledge and a broader viewpoint, based upon actual experience, than has been available heretofore.

Probably there is not a single person here to-night who has not read with interest of the project recently launched for a Plan of New York and its Environs. The entire area within a radius of fifty miles is to be surveyed, portions of three states are involved, and a total of more than 300 political groups are found in the area concerned. It is an undertaking so vast, so comprehensive, as to challenge the wonder and admiration of us all.

While our plans may not be so ambitious as those of New York, they are actuated by the same desires, the same city planning principles will be applied to the solution of the different problems, and the results hoped for are identical. We have already been assured of the coöperation and assistance of several of the leading civic organizations, and I hope that a resolution is taking shape in the mind of every one of you here to-night to give to us the same whole-hearted sympathy and support which has been extended to the New York project, to the end that our hopes may be realized, and that future generations will find the prophecies of to-day accomplished, with New York working out her destiny as the "foremost city in all the world," — except Boston!

The last word I am going to leave with you to-night is not my own. It is the oft-repeated injunction of a man who is known to engineers as a pioneer in tall office building construction, one of the creators of the Columbian Exposition, architect of several large railway stations, the guiding spirit in that magnificent conception, the Chicago Plan, and at all times and above all, a City Planner, Daniel H. Burnham. His words, which have come down the years with all the force of prophetic wisdom, contain not only a message but a mandate for engineers and for City planners alike, —

> "Make no little plans; they have no magic to stir men's blood and probably themselves will never be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

METHOD USED IN PRESENTING THE THOROUGHFARE PROBLEM IN THE REPORT OF THE NEWTON PLANNING BOARD.

ARTHUR A. SHURTLEFF.* — The importance of setting forth clearly and very briefly to the voters of a city the reasons for the selection of a certain group of streets for thoroughfares, cannot be overestimated. Unless the voters are thoroughly convinced that the lines selected are logical, there is little chance that officials will meet success in carrying these lines forward to execution. In the recent report prepared by the writer† for the Planning Board of Newton, Massachusetts, great pains were taken to present the thoroughfare problem in a way to catch and hold the attention of the "man in the street." The readers' attention was sought by the use of a series of thoroughfare maps and plans, some of which are reproduced below, and by a series of corresponding brief paragraphs printed in large type with attractive headings. As this material was arranged on large sheets, more than three times the size of the pages of this JOURNAL, the effectiveness of this method of presentation can only be judged by reference to the report itself. It is hoped, however, that the following descriptions of the plans may lead those interested in the subject to refer to the report itself.

Evidently the "man in the street" is more incredulous regarding the thoroughfare system for an exceedingly irregular system of streets than concerning one which follows a rigid gridiron layout. For that reason, the first plan shown in the Newton Report illustrates the present street system and over it is written in large letters, "The Plan of Newton's present Street System looks confused." (Fig. 5.)

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* Landscape Architect, 89 State St., Boston, Mass.

† The preparation of these plans would have been impossible without the whole-hearted coöperation of all the members of the Planning Board and the Heads of Departments including the City Engineer, Edwin H. Rogers, Jr.

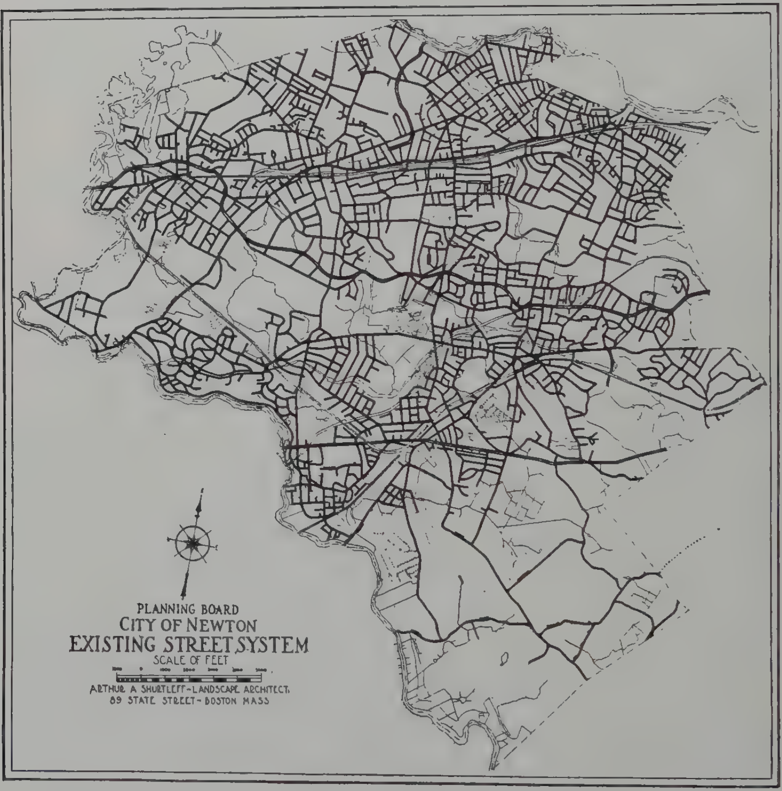
PLANNING BOARD
CITY OF NEWTON
EXISTING STREET SYSTEM
SCALE OF FEET
ARTHUR A SHURTLEFF - LANDSCAPE ARCHITECT.
89 STATE STREET - BOSTON MASS

FIG. 5.

The reader is then reminded that the apparent confusion of the plan arises in part from the irregularity of the ground which makes long continuous straight streets impractical, and from the fact that Newton, like most other communities, grew by accretion without adherence to any rational plan. The suggestion was then made that an approach to a rational system of highways might be discovered by the method of analysis which is illustrated in the four following diagrams. The first of these diagrams (Fig. 6) is evolved by combing the tangle of streets to reveal only those which lead continuously across the city from North to South. This diagram is accompanied with a large heading reading, "Only Six Through Streets Now Cross the City North and South." The readers' attention is then called to the fact that this system of thoroughfares is inadequate as the streets lie nearly a mile apart and that intermediate through streets could be created if the fragments of intermediate streets were united.

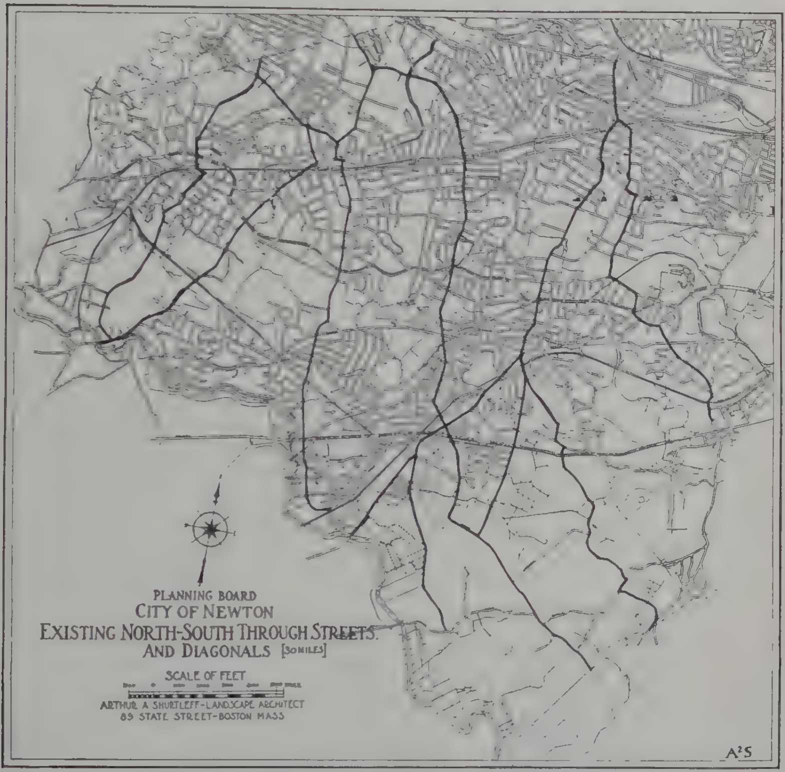
PLANNING BOARD
CITY OF NEWTON
EXISTING NORTH-SOUTH THROUGH STREETS.
AND DIAGONALS [30 MILES]
SCALE OF FEET
ARTHUR A SHURTLEFF-LANDSCAPE ARCHITECT
89 STATE STREET-BOSTON MASS
A²S

Fig. 6.

The next cut (Fig. 7) shows the method of uniting these fragments to secure the thoroughfares described, and a careful statement is given of the distance separating these thoroughfares with a cross reference to the spacing of similar thoroughfares in well known so-called "Garden Cities" of the country.

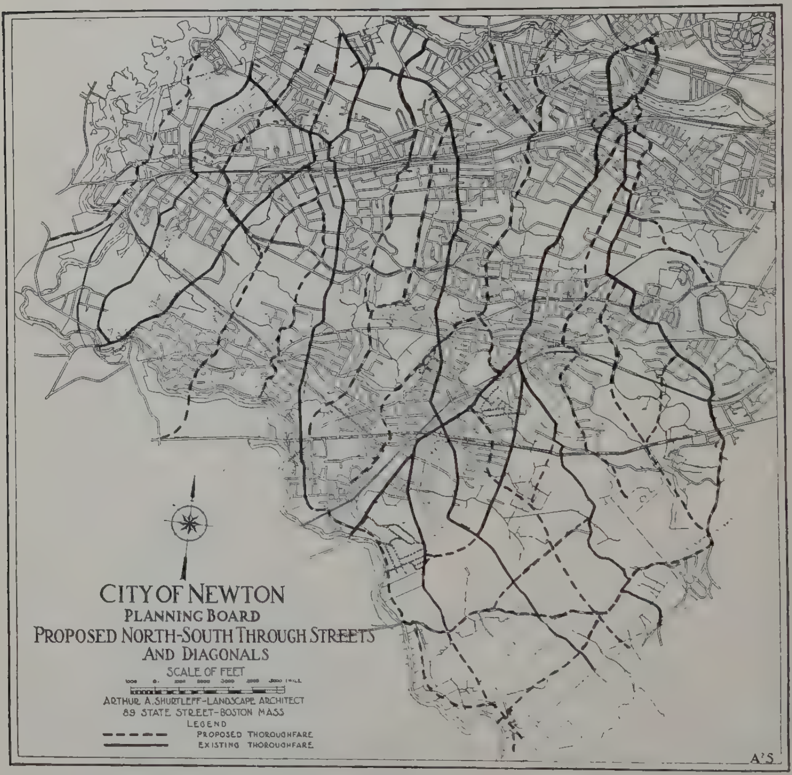

FIG. 7.

An analysis of the existing through streets crossing the City from East to West is then shown in a diagram (Fig. 8). In this case, the combing operations reveal only East-West through streets and is described with a heading, " Only Seven Through Streets Now Cross Newton East and West."

Having held the readers' attention more or less successfully to this point, it is a simple step to indicate, by methods noted above, the feasibility of uniting street fragments to create many more through streets in this direction. This operation of piecing together is shown on the following diagram (Fig. 9) which is entitled, "Twelve Additional East and West Through Streets can be Found."

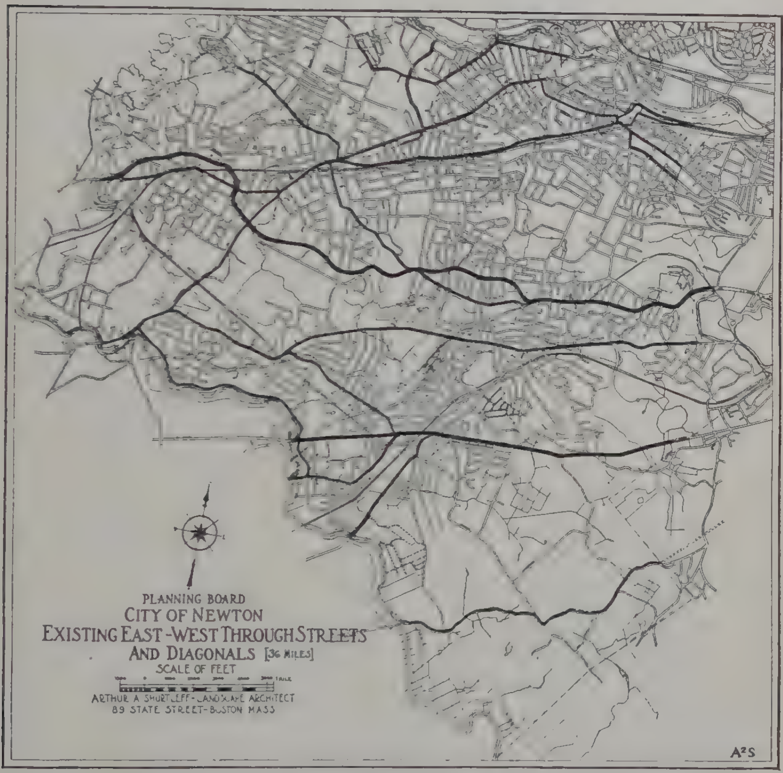
PLANNING BOARD
CITY OF NEWTON
EXISTING EAST-WEST THROUGH STREETS
AND DIAGONALS [36 MILES]
SCALE OF FEET
1 MILE
ARTHUR A SHURTLEFF - LANDSCAPE ARCHITECT
89 STATE STREET - BOSTON MASS
A²S

FIG. 8.

Obviously the "man in the street" who is in a critical frame of mind, wishes to be assured still further of the wisdom of these thoroughfares by reference to a more detailed map giving the names of the fragments to be united, and recalling to his mind the topography involved. These facts are set forth on a large plan nearly a yard square at the end of the report on which all these lines are combined.

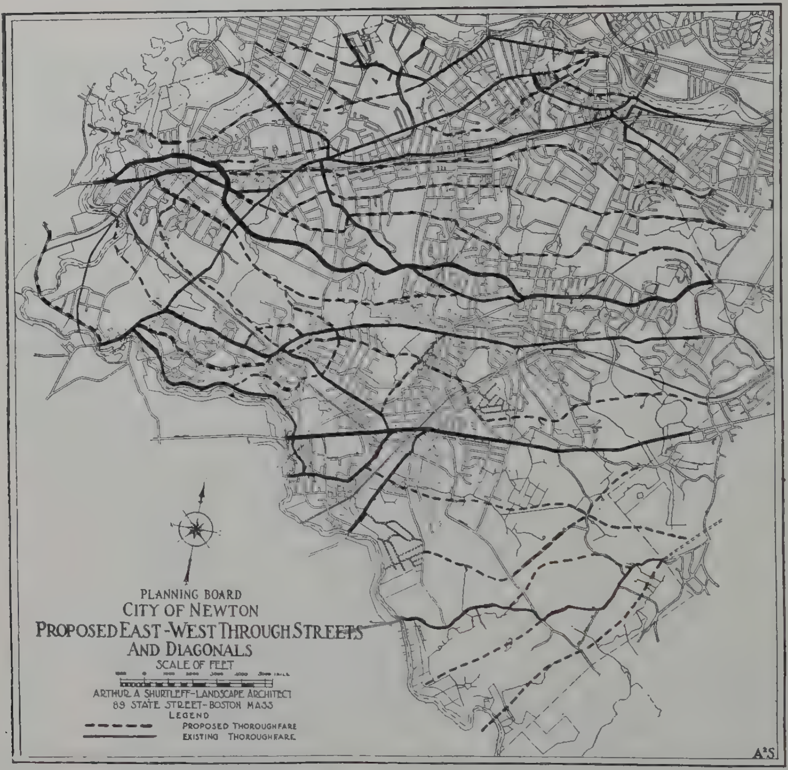
PLANNING BOARD
CITY OF NEWTON
PROPOSED EAST-WEST THROUGH STREETS
AND DIAGONALS
SCALE OF FEET
1000 0 1000 2000 3000 4000 5000 1 MILE
ARTHUR A SHURTLEFF-LANDSCAPE ARCHITECT
89 STATE STREET-BOSTON MASS
LEGEND
PROPOSED THOROUGHFARE
EXISTING THOROUGHFARE
A^{2}S

FIG. 9.

The report also provides, for the use of those who wish to pursue the subject further, a schedule of street connections and street widths. Diagrams are also given showing the feasibility of accommodating modern traffic in streets of widely different capacity.

Thus far, the Newton report has met with unusual success as it has been widely read by the "man in the street."

DESMOND FITZGERALD.* — Mr. President, ladies and gentlemen: I have been exceedingly interested in this meeting to-night. We have had so many good papers and there have been so many excellent suggestions, I should like to say a few words in regard to the necessity of starting what we have been calling "City Planning" in towns before they become cities. Cities as a rule grow rapidly, but we have some very large towns and sometimes the towns prefer to keep their own forms of government as long as possible, as Brookline has done, rather than adopt those of a city. We have about 40 000 people in Brookline to-day.

As a rule people in the beginnings of things feel, I think, that it is wise to provide a civic center. There has been nothing said to-night about the civic center. I have been very much interested in the way Mr. Shurtleff has worked out his plan for streets and also what was said by Mr. Nye and by the lady who followed him; but another important point seems to have been overlooked, and that is the civic center.

There are several public buildings that every town has to have. It must provide a Town Hall, school houses and as a rule a library, a court house and police station,—and there are a number of buildings which have to be added as the town grows. It is important for us to impress upon the town in which we happen to live the great advantage of securing plenty of land at the very beginnings of settlement to provide for the growth of the town, and it is a splendid thing for us all to do for any town in which we may live, to see that it is provided with a very large and ample space for a civic center Think of what an attractive public center we could have had in Brookline if it had reserved such a place twenty years ago. I gave up one vacation many years ago to study a comprehensive plan for this very idea and I tried to convince the town how necessary it was that Brookline at that time should provide itself with very large and ample ground for a civic center. Now shops and buildings have gone up on land which should have been reserved for the civic center.

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* Consulting Engineer, Brookline, Mass.

At the same time that ample land is set aside for a civic center the question of the character of the architecture should be studied. Think of what a deplorable condition arises when second, third and even fourth rate architectural designs are permitted. That is simply throwing away money. Such buildings cannot add to the attractiveness of a town. If some persons of great forethought and taste would only give the benefit of their advice to some of our towns I think that we should have a very different state of things. Then people would be attracted from all around to go and see a town with a beautiful civic center, — beautiful buildings, parks well laid out, — tasteful. Think of what a wonderful thing for a town to have. Some things I have seen on the other side have approached that. I have seen some in this country, but particularly on the other side. I remember some cities where, instead of locating magnificent museums on small spaces hardly big enough for the buildings, these cities have always provided ample spaces to give the buildings beautiful settings.

Almost the last thing we think of here is the setting of our public buildings. The result is that even a beautiful piece of architecture may be ruined by insufficient surroundings to give it dignity and distinction.

I didn't mean to speak as long as I have, but I hope you will all think this matter over, and I believe you can exercise an immense amount of influence as engineers, in this important direction.

E. H. ROGERS.* — The town of Brookline has been much interested in the subject of zoning, and I have here a copy of a report of the Selectmen in regard to a special town meeting which is to be held in Brookline, May 23, and as Mr. Varney, the Town Engineer, is not here to do so, I am going to read one or two paragraphs from the report of the Planning Board contained therein relating to zoning.

" *Zoning Defined.* — Zoning is the fair regulation of the use of private real estate by giving each piece of property just such protection and just such liberty as is most valuable and suitable to it. Zoning acknowledges that there are different kinds of districts — such as residential, business, or industrial — and gives to each district such regulation of the use and construction of buildings as is appropriate.

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* City Engineer, Newton, Mass.

"*Precedents for Zoning — Private Restrictions.* — Real estate men have for many years done their own 'zoning' in the form of private restrictions imposed by deed, as in a number of the best residential districts of Brookline. Practical realtors see the money value of proper regulation of the use of property: *the man who wants to invest in a home will not buy a lot where there is danger of a factory or a store building being located next to him.*

"*Disadvantages of Private Restrictions.* — Private restrictions are, however, unsatisfactory in many ways: they are applied to comparatively small and unrelated areas, they are liable to cause much litigation and any change before the date of their expiration is practically impossible.

* * * * * * * * * * * *

Store property is seldom protected by private restrictions, although it is obvious that stores may suffer from the proximity of such uses as garages and manufacturing in much the same manner as residential property. Zoning protects store districts."

The city of Newton also has been greatly interested in the question of zoning during the past two months. It has a very efficient Planning Board which recently made a recommendation to the city government in tentative form in regard to zoning with a proposed draft of an ordinance which was referred by the board of aldermen of twenty-one members to a special committee of the board consisting of seven members. This committee has gone in great detail into the zoning question and is preparing what it is believed will prove a suitable ordinance for the city, using as a basis at the start the ordinance submitted by the Planning Board which was suggested by Mr. John P. Fox of New York, who is probably as familiar with zoning ordinances as any one in the country. It was found by the aldermanic committee that the ordinance required a radical revision owing to the peculiar civic situation of Newton. As many of you know, Newton is divided into ten different semi-independent villages, — such as West Newton, Newtonville, Auburndale, etc., each one of these centers having a local improvement society, a men's club, or some other group of citizens interested in the development of the village, and the zoning committee of the aldermen requested each village improvement society or other organization to hold meetings and hearings to get the ideas of the people as to zoning limits and restrictions. It also requested the Chamber of Commerce to have a committee appointed to review the findings of these local committees and add its advice. This has all been done, the various local committees having in general gone into the subject with great thoroughness, in one case canvassing practically every home in the district, to find out precisely what the people wanted. The results have been codified and embodied in the present ordinances so far as practicable.

As it is getting late I will review very briefly the manner in which this ordinance is worked out.

The city is divided into five districts, comprising four principal districts, — single residence, general residence, business and manufacturing, with a limited unrestricted district. The greater part of the city is classified in the single residential district, between 75 and 80 per cent. being so included according to the present draft of the ordinance. The balance of the area is largely in the general residential district which permits two-family and tenement or apartment houses, and the portion allotted to business and manufacturing enterprises, the two latter comprising 5 per cent. or less of the whole area of the city. In canvassing the inhabitants it was found that the majority of the people wanted their homes in the single family district, comparatively few desiring their property placed in the general residence or business districts. In some sections of the city it is quite apparent that people wish their property put in the single residence zone when really they might be better off in the business district, because if those owners of real estate located close to the growing business centers desire to dispose of their holdings they undoubtedly can do so to better advantage if they are able to sell it for future business purposes, although many feel if their property and that of their neighbors is restricted to single family use they will stave off business as long as they want to reside in the district.

There is one locality in Newton in which some of the few mills in the city are located, being one of the older parts of the city, and in that district the people, at the meetings that were held, indicated they wished to have practically the whole of that part of the city put in the manufacturing district, so that the mills and factories would be given a chance to expand and the property owners might be able to eventually sell their property to the mill owners for manufacturing purposes or the erection of model homes at a possible enhanced valuation.

Another important item of the proposed Newton ordinance is the setback lines, as they are called. There is in the General Laws a provision for establishing building lines at certain distances back from street lines. This ordinance provides setback lines under a different law and which is extremely advantageous as damage suits are unlikely to occur. In the single residential zones 25 feet, and in the general residential 15 feet, is the setback adopted, — substantially the same as has been favored in Brookline. In the business and manufacturing districts there are no setback lines.

It is generally realized that a zoning law should be both permanent and elastic. It should ensure permanency as far as possible, so as to assure people who buy property of the permanency of the neighborhood. On the other hand it should be sufficiently elastic so that the character of a district or zone can be changed as necessity demands. It is absolutely imperative to allow more room for stores and for business as a city grows. The General Laws of the commonwealth provide that changes can be made in a zone only by a three-quarters vote of the board of aldermen or other governing board, if there is any objection from persons interested, and in no event by less than a two-thirds vote; so property owners in general are pretty well safeguarded from unwarranted changes.

In line with Mr. Nye's discussion I see a member here who has had much experience in Board of Survey work. I refer to Mr. F. O. Whitney of the Boston Street Laying Out Department who may be willing to add something of interest.

Frank O. Whitney.* — The hour is rather late and this is not a new subject. Besides it has been quite thoroughly covered, and the difficulties brought out very clearly by Mr. Nye. I do not take quite so pessimistic a view of the working out of the Board of Survey law as he seems to. I think in the City of Boston it has worked out as well as could be expected. The Board of Survey was created just thirty-one years ago and you all know how difficult it is to look forward fifty years or more to what the needs may be, and to provide street systems that will be suitable for the future time, so that many changes have been necessary. The law, as Mr. Nye says, has no penalty except deprivation of public improvements where the law is violated; and I think that the experience of Boston has been that that penalty is practically sufficient, because people who are developing land need the public improvements. Buildings are practically useless unless they can have public improvements and unless they do have them the Board of Health will undoubtedly become active, so on the whole the Board of Survey law has worked very well in Boston.

There have been some conspicuous violations. I have one in mind of a large area where about 60 acres were developed by a real estate owner who advertised it as a camp and laid out streets where we had a system of suitable streets 40 ft. wide, as a rule, and had decided the lines and grades; and who developed a plan of streets 15 ft. wide and house lots 20 ft. wide, and sold to unsuspecting people who built more or less permanent buildings and found no water supply or sewerage conveniences. The Board of Health, the Public Works Department, the Street Commissioners and the Law Department have been puzzled to know how to deal with this territory. We cannot give them those improvements because they have violated the law, and they are in very bad straits. I have a list of those streets and when applications for permits to build come to me, if I see one of those names of streets, I recommend that the request be denied or the petitioner be informed of the real condition.

The Board of Health is seriously puzzled about it. We cannot widen the streets. If we widen them the building lots will become too small to be serviceable. The water supply consisted of pipes laid on the surface of the ground and a fountain where one could draw water in a bucket, and these froze up the first season.

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* Chief Engineer, Street Laying Out Department, Boston, Mass.

This is an extreme case. It is one of a very few. On the whole the law has worked very well. I think the Ex-Mayor will bear me out that it was a good thing to have the Board of Survey Law.

There is just one other matter I would call attention to as a matter of interest, — and that is that the City of Boston has been considering a zoning system. This subject was brought to the attention of the Street Commissioners by Mayor Peters about a year and a half ago and the New York ordinance and maps were very carefully studied, and first a plan was drawn dividing the whole city into zones, — the residential, restricted, unrestricted, business and mercantile. The whole city was covered and an ordinance was written, based practically upon the New York ordinance, though not so detailed. New York goes into the building problem very largely.

We have good building laws here in Boston and it is not necessary to go into building construction in our zoning plan. The Mayor presented it to the Council for action. They have not yet reported on it. It has also been before the Planning Board for criticism and suggestion.

MORRIS KNOWLES.* — Mr. President and fellow members of the Boston Society of Civil Engineers and ladies, — I came in late to-night at the conclusion of another meeting and have not heard all of the papers and did not expect to be called upon. I am a native of these parts, although now a resident of the Middle States for some time, but still always interested in what is going on here at the Hub.

The discussion of city planning at a meeting of engineers is indeed appropriate, in view of the fact that the engineer has been in the past the original city planner. If he has given good engineering service, then he must have planned for all municipal developments and has looked ahead in laying out water works systems, sewers, highways, lighting and transportation.

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* Consulting Engineer, Pittsburgh, Pa.

This subject is also appropriate to be discussed here in the City of Boston. I was particularly glad to hear the Mayor speak of the Metropolitan District, as I have always regarded the early work in Boston, the development of the Metropolitan Water-works and Sewerage Districts, as among the pioneer endeavors in this country. It would be too bad, indeed, if petty jealousies of the various communities making up this district should prevent their full coöperation in the future and delay working together for the benefit of all of them.

However, the human element is one of the greatest difficulties in the development of town planning and particularly in the creation of metropolitan districts. General Chittenden once made a remark in connection with the Miami Conservancy District, that the time taken and the money spent to educate the people in the various sections of the district was as much as the time and money spent on actual engineering on the project. The delays in the organization of the Miami District were due to human elements involved and not to physical and financial problems.

One of the most popular and most active phases of the city plan in this country to-day is that of zoning; the direct effect of lack of zoning on depreciation of real estate values being so clearly apparent, is no doubt the cause of the predominance of this phase of city planning to-day. The introduction of garages in a residential district, the erection of obnoxious buildings, the maintenance of nuisances and the introduction of objectionable industries are things which directly affect the pocketbooks and attract the public attention. These things particularly have probably given the impetus to the great demand for city zoning.

In this connection, I may refer to the fact that zoning in itself cannot be solved without a consideration of its relation to the other elements of city planning and to a full knowledge of existing conditions and how they are likely to change.

I wish also to call attention to the work which is being done by Secretary Hoover of the United States Department of Commerce along these lines. He is trying to do for the urban communities of the country some of the things in this way that the Department of Agriculture has been doing along similar lines for the farming interests of the country. One of the activities arises out of the appointment of a committee to study a Standard Building Code, and the other is due to the work of a similar committee to study Zoning.

Among the first things to attract the attention of the Committee on Zoning were the cases where regulations are being advocated and studies progressing without any adequate investigation and information on the correlated subjects of city planning. It was thought in these communities that zoning ordinances could be successfully worked out without a consideration of the city plan and its development. However, this is not the case.

With regard to the zoning work, there has already been issued a Zoning Primer, which is being given publicity by the National Association of Real Estate Boards. Portions are now being printed in the real estate section of the Sunday editions of the various newspapers. It will probably take about a month or so to complete its appearance in that form, and then it will be released for general publication and it can be obtained then in pamphlet form by everybody. The Zoning Committee now has under consideration a Standard Enabling Act which has been drafted. When this has been completed, the Committee will then consider a typical ordinance with annotations and discussions.

As previously stated, the big end of this work is the development of public opinion. Colonel Roosevelt once said, " This country will not long be a good place for any of us to live in unless it soon becomes a good place for all of us to live in." City planning and zoning will be the result of just such public thinking and discussion as this here to-night, for city planning is not a one-man-job, but needs the full coöperation of the community and of all the men and women making it up. I was much interested in attending a meeting in New York the other night, held under the auspices of the Russell Sage Foundation, to note the interesting cross-section of the people of New York. There were engineers, architects, artists, lawyers, corporation leaders, bankers, people of means, social workers and many others, — all united in one cause, namely, the development of the surroundings of New York City, rather than the city itself.

At the annual meeting of the Chamber of Commerce of the United States held in Washington last week, much interest was shown in the work of the Civic Development Department of the National Chamber. Nothing emphasized the need of immediate town planning so much as a statement by Col. Leonard P. Ayres, Vice-President of the Cleveland Trust Company, in discussing the building industry. He showed that in fifty cities in this country they were on the average two and one half years behind in the erection of buildings, and that the immediate future must carry an overloading of approximately 20 per cent. a year to catch up with the present lack. If such a building program be carried out in this country, it shows the pressing importance of adequate planning, in order that wise locations and arrangements shall be determined for our future growth.

The great point which Colonel Ayres made was that unless there is adequate planning now a great deal of this work will be carried out in a shoddy fashion, poorly arranged and cheaply constructed — built too rapidly but not wisely planned. Wise planning is the great need of the country to-day.

BERTRAM BREWER.* — Mr. Nye's paper sets forth the negative and discouraging aspects of the problem of securing good street planning, but no one could look upon the illustrations which he showed of what has been accomplished in the city of New Bedford without realizing that it has been Mr. Nye's good fortune to accomplish very much notwithstanding the handicaps he so admirably describes.

The writer was instrumental in securing the passage of certain Board of Survey laws and had a dozen years' experience in working under them. This experience and the maturer opinions which have come from a retrospect after a period in the thick of the battle have led him to believe that too much law is as undesirable as too little, and that we certainly have enough to accomplish very much. Those who have succeeded in positions of authority know that there must be a give and take spirit in municipal affairs, and that in the long run persuasion and education have a decided advantage over compulsion. Furthermore, all boards of survey are not as well advised as the New Bedford board, and perhaps are not fitted to undertake the larger responsibilities which go with larger powers.

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* With the State Department of Health, State House, Boston, Mass.

In the matter of control of new streets, the writer believes that we have all the authority necessary because an appeal by the municipal authorities can be made to the more selfish instincts of mankind. It can always be said that it is for the interest of the home buyer to purchase a lot on a street which can be accurately located at any time, having a grade which is recorded and is acceptable to the municipality. It doesn't take much persuasion or reasonable advertising to convince the average man of these advantages. Moreover, the majority of real estate operators, when they find that they have a competent official to deal with, are also glad to take advantage of Board of Survey laws. The competency of the officials, however, is of prime importance and does not always have the weight that it deserves.

There may be some question about authority where existing streets should be widened or relocated and new streets laid out in a built up district. Most such improvements are expensive and are easily blocked and it is usually a hard struggle to accomplish anything worth while. It is very easy, though, when one is in the fight and is perfectly satisfied that what he wishes to accomplish is for the best interests of the community, to wish that he could compel the action which he knows to be desirable. It is always well to remember, however, that it doesn't pay to go too far beyond the average public sentiment.

The best weapons are always at hand and they are easy to command. The newspapers are always ready to advertise and discuss or to publish anything worth while on a municipal improvement. Sometimes the politicians will use a good plan as a campaign slogan, and, better still, there is always a group of intelligent persons in any community who will be glad to learn the details of any well thought out plan and will pass it on with a recommendation to their neighbors.

A special writer for one of the Boston papers says that he judges the value of an item which may go into his story by its value for repetition. That is, he considers whether it is the sort of thing which one would read and then repeat to his neighbor next day. There is a whole world of publicity open to the planner which has hardly been touched, expecially of the sort which appeals to the ordinary man.

Innumerable ways for education and for promoting a good and desirable improvement will occur to everyone, but the writer cannot close this discussion without reference to one other which occurred to him during Mr. Shurtleff's interesting exposition of several planning projects in which he has been interested. Massachusetts is more fortunate than any other State in America in its expert city planners, and there are at the command of its cities and towns men whose reputation is country wide. The advice and backing of a specialist are always available to that municipality which is awake to the larger opportunities for improvement which can come only with proper planning.

R. A. HALE.* — I should like to add a word of tribute to Mr. Charles H. Storrow, grandfather of James A. Storrow of Boston, in laying out the City of Lawrence, — the water power development, the mills and canals and the principal features. Main Street is 80 ft. in width, and the smaller streets 60 ft. In the center of the city is a large common park which is practically the civic center of Lawrence, as there are grouped about it eight churches, a high school, masonic building, City Hall, and various other structures which make it the main center. Shade trees were planted and the residential portions were planned in certain parts — practically a zoning system, and all done in a very systematic way. It has not worked out quite as expected, but no buildings over 10 ft. in height have been put up unless they are of stone, brick or durable material, and in many parts of the city there are restrictions in regard to setting back. The greater part of the deeds make a restriction with regard to the sale of intoxicating liquors, although such a deed seemed a little odd when it provided that the Methodist Church should not sell intoxicating liquors.

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* Engineer, The Essex Co., Lawrence, Mass.

The matter is now in the hands of a Planning Board which, however, has not been very active. The zoning system has really got to be taken up as foreign population has invaded the residential district in such a way as to make it very uncomfortable for the old residents and it will be interesting to see what can be done about it.

MEMOIRS OF DECEASED MEMBERS.

CHARLES EDWIN HABERSTROH.*

Charles E. Haberstroh was born in Boston, February 13, 1849, the son of John J. and Martha A. (Mason) Haberstroh. He died at his home in Framingham, September 24, 1921.

He married, in 1877, Helen A. Chase. His family at the time of his death consisted of his wife, a son, E. Roscoe Haberstroh, and three married daughters, Mrs. Charles N. Hargraves, Mrs. George Sullivan and Mrs. Herbert E. Damon. His wife survived him but a few months.

Mr. Haberstroh was an engineer of great activity and energy and was among those who fulfilled important positions in the employ of the City of Boston and later of the Commonwealth of Massachusetts in connection with the Sudbury System of water works, which on January 1, 1898, was transferred from the City of Boston to the Metropolitan Water Board.

His earlier education was obtained in the public schools of Boston, graduating from the English High School in 1870. He entered the Massachusetts Institute of Technology in 1871 and remained there three years, when he left to accept a position on the engineering force of the Boston Water Works at what, at that time, was known as South Framingham, in the newly established office of the Sudbury Reservoirs and Aqueduct.

The Sudbury System, planned by the late Joseph P. Davis, past-president of our society, and which was large and comprehensive in its inception for those early days — being the second stage in the provision for the Boston Water Supply — was then barely outlined and construction was just beginning. Mr. Haberstroh thus began his engineering career under the influence, tutelage, and guidance of such men and accomplished engineers as Joseph P. Davis, Alphonse Fteley, Frederic P. Stearns and Desmond FitzGerald.

---

* Memoir prepared by Frank S. Hart and Frederic J. Winslow.

He remained to see this work developed and completed, practically as originally planned; and he grew up an important factor in its consummation, as he was in the same office, with successive promotions, until his seventieth anniversary, being for many years the Assistant Superintendent of the Department.

He lived to see the water supply of the Sudbury river watershed become too small in quantity for the population depending upon it for an adequate source of supply, and to take its place as a part of a much larger system. He met the changing conditions of the situation by keeping in close touch with its growth.

Being a man of push and activity, these characteristics found their vent in giving service to his fellowmen in various public ways, always without compensation. He served for nine years as a member of the Framingham School Committee, during which time the High School building on Union Avenue was erected, at that time the largest and most prominent municipal public building belonging to the town.

He was for several years, and at the time of his death, a vice-president of the Farmers and Mechanics Savings Bank of Framingham, one of the largest and most important institutions of its kind in the vicinity.

He joined the Boston Society of Civil Engineers on September 16, 1885, and later the New England Water Works Association.

He was a member of the Alpha Lodge Free and Accepted Masons of Framingham, the Framingham Country Club, and at one time was president of the old Framingham Club.

Mr. Haberstroh, in line with the maxim of Francis Bacon, " Every man is a debtor to his profession," contributed a valuable addition to engineering literature in an article on hydraulic experiments which appeared in the *Journal of Engineering Societies* for January, 1890, being read before the Society at the meeting in May, 1889. The experiments and articles were inspired by our honored fellow member Mr. Desmond FitzGerald, the Resident Engineer and Superintendent of the Western Division of the Boston Water Works and at that time the President of our Society.

They were of the class which has given New England Civil Engineers a reputation for comprehensiveness, exhaustiveness and reliability and were especially appropriate in supplying information relating to data desirable concerning the flows through the standard pattern of gates in general use on the Boston and other water works reservoirs and at the overfalls at the dams.

After many years, during which he filled under the City of Boston and the Metropolitan Water Board, the position of Assistant Superintendent, in 1907 he was appointed Superintendent of the Sudbury Department, and while the work of this position was one largely of maintenance, it was the quality and scope of engineering work demanded of him, and others in like positions, which led the Metropolitan Water and Sewerage Board to make the following statement in its report for 1917:

> "It may be claimed with entire justice that the ability adequately to main ain a complicated system of water-supply requires qualifications not inferior to those of the men employed in the original construction, however they may differ in character."

In line with this very appropriate and deserved sentiment, the same Board on February 13, 1919, on the occasion of the retirement of our fellow member, passed the following highly commendatory resolution:

> "In the retirement of Charles E. Haberstroh, Superintendent of the Sudbury Department, which occurred February 13, 1919, the Board feels that the Commonwealth has lost a capable and faithful servant who has rendered useful and important service in the construction and maintenance of the Metropolitan Water Works. Mr. Haberstroh was connected with the water department of the City of Boston for many years prior to the acquisition of the works by the Commonwealth and had a comprehensive and practical knowledge of the Sudbury Department of which he was appointed Assistant Superintendent by the Board at the time of the taking of the Boston Water Works in 1898.
>
> "In February 1907, he was promoted to the Superintendency because of his knowledge of the Sudbury Department and held that position until his retirement.
>
> "His employment of more than twenty-one years has been characterized by faithful devotion to the work with which he was entrusted and untiring zeal in the discharge of the many and arduous duties devolving upon him."

The Committee thinks it fitting to also place upon record the following tribute by Mr. Desmond FitzGerald, who more than any other engineer, had long and intimate dealings with our deceased brother:

"Mr. Haberstroh's long and faithful service for the Boston Water Works has ended, but the memory of his devotion to his work will abide for a long time with those who were familiar with his career.

"During all the years that I was associated with the department, I trusted him implicity, and I cannot recall a single instance where that trust was violated. The nature of his duties was such as to call for undivided attention to many efforts in different directions and covering a large area of operations. The regulation of the flow on the aqueducts, the attention to rainfall and other records, the superintendence of extensive areas of territory contributory to the supply of water to Boston, called for unfailing efforts and good judgment in dealing with towns and individuals upon the watershed."

WILLIAM NELSON.*

William Nelson was born in Laconia, N. H., April 20, 1871, and after a lingering illness passed away there at his home on March 13, 1922.

He was educated in the Laconia public schools and was graduated from the High School in 1887. From that time until 1890 he served his apprenticeship in the machinist trade and also studied civil engineering; then was employed for several years by the Concord and Montreal Railroad in Concord, N. H., in the engineering, maintenance of way, department.

From 1892 to 1900, he served as City Engineer, Superintendent of Sewers and Street Commissioner in his native city, where his faithful, conscientious service will long be remembered. He organized the Public Works Department and laid the foundation for its future policy on a sound basis, and he had charge of the construction of the sanitary sewerage system which was begun during his term of office.

---

* Memoir prepared by Chas. A. French and C. Frank Allen.

Following his resignation from office in Laconia, he installed machinery and stone crushing plants through New England, and was with the Fairbanks Co., in Bangor, Me., as manager of a large mill supply and wholesale house. Later he was sent to Binghamton, N. Y. by this firm to erect, equip, organize, and superintend a $750 000 plant for the manufacture of brass and iron body valves. By order of his physician he was compelled to give up this work in March 1911.

He then became Vice-President of the Osgood Scale Co., later becoming President. At this time he was elected Secretary of the Binghamton Chamber of Commerce, and perfected the consolidation of this organization with the Mercantile Press Club, with a combined membership of 600.

During the war he was connected with American Red Cross as Assistant Director of the Atlantic Division, doing intensive campaigning and organizing.

In 1918, he became connected with the Walworth Manufacturing Co., as Consulting Engineer for the firm.

Mr. Nelson became a member of the Boston Society of Civil Engineers in March 1897, and had been an Associate Member of the American Society of Civil Engineers since March 1900. He was a member of the Congregational Church and a Past Master of Mt. Lebanon Lodge, A. F. & A. M. of Laconia.

He married, in 1892, Mina L. Flint, who survives him, together with two sons and a daughter.

He was intensely loyal to his family and his friends, and his death is a great loss to his native city.

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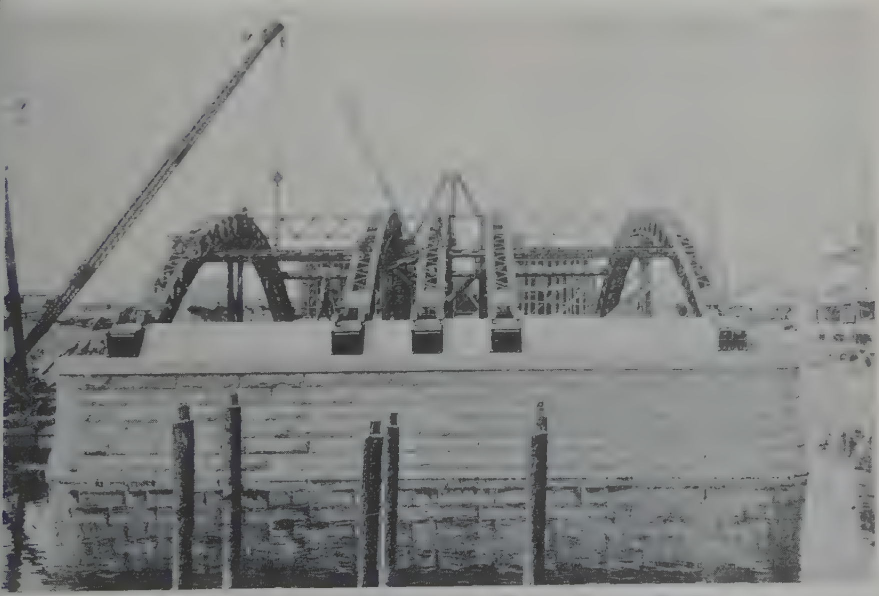

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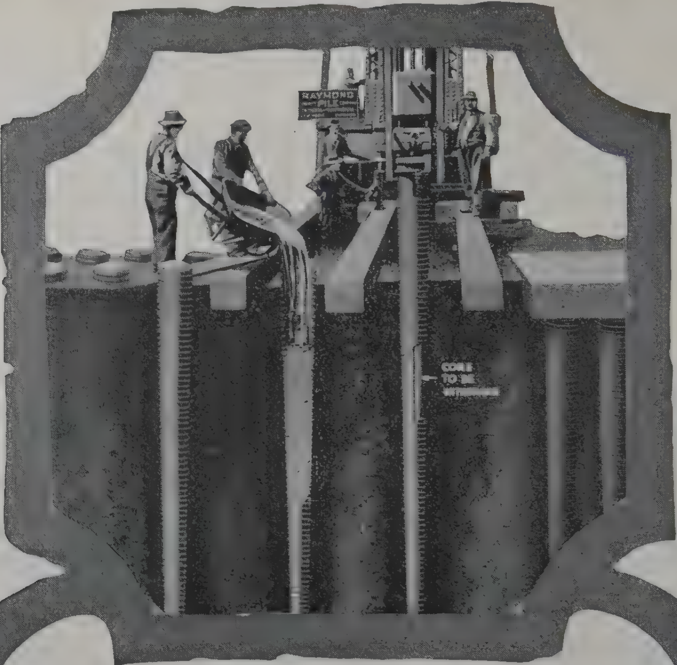

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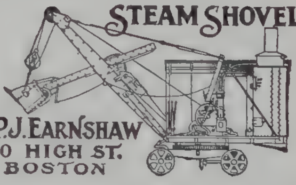

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Engineers' Society of Pennsylvania, 31 South Front Street, Harrisburg, Pa.
Engineers' Society of Western Pennsylvania, William Penn Hotel, Pittsburgh, Pa.
Louisiana Engineering Society, State Museum Bldg., Jackson Square, New Orleans, La.
Montana Society of Engineers, Butte, Mont.
Pacific Northwest Society of Engineers, 803 Central Bldg., Seattle, Wash.
Rochester Engineering Society, 131-135 Sibley Bldg., Rochester, N. Y.
Technology Club of Syracuse, Vinney Bldg., Syracuse, N. Y.
Vermont Society of Engineers, Montpelier, Vt.
Western Society of Engineers, 1735 Monadnock Block, Chicago, Ill.

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